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Dear Sir:

Some $8,350,000 have been allocated by the Defense Department to Project Vela concerned with monitoring nuclear detonations particularly those underground. Orders to construct two model detection and plotting stations have been given to the Air Force's Technical Applications Center, successor to the Air Force agency which for many years has been monitoring nuclear detonations in areas outside the U. S., including the Soviet Union, etc. A 180 station network, as proposed, will use experience gained from the prototypes. One of these first two stations, which will have some ten seismographs among its instrument array, will be in central part of the U. S. The other, with more elaborate instrumentation, is in a less definite status. Project Vela will also sponsor basic research on generation and propagation of seismic waves; production of improved seismographs; and operation of seismographs in deep holes. (Other RESEARCH NEWS, p. 3 this LETTER.)

Overall amalgamation of all the Rio Tinto Group uranium mining companies in the Algoma mining district of Canada into one new company to be called Rio Algom Mines, Ltd., and reduction in mining rate of Rio Tinto's current one million pounds per month to 390,000 pounds per month, is now planned by Rio Tinto Mining Co. of Canada, according to Robert Winters, president. Mr. Winters explained that this attempt to stretch out uranium remining in the contracts of the mines until Nov. 30, 1966 would mean that by 1961 the only two mines of the Rio Tinto Group producing uranium in the Elliott Lake district would be the Nordic and Quirke properties of Algom; others would be put on a care and maintenance basis unless the company succeeded in obtaining additional contracts. He stated the details of the plan were this: Algom will sell to Northspan its Nordic mine; and Algom, Milliken, Northspan and Pronto will thereafter amalgamate and continue as one company. Basis of conversion will be: 165 shares of Rio Algom for each 100 shares of Algom; 14 for each 100 Milliken; 13 for each 100 Northspan; and 35 for each 100 Pronto. (Other BUSINESS NEWS, p. 2 this LETTER.)

Contract in amount of $103,000 for determination of minute quantities of radium and thorium isotopes in solutions and solid residues has been awarded Ionics, Inc., Cambridge, Mass., by the USAEC. Under terms of the contract, analytical methods developed must be simple and reliable and capable of measuring concentrations of these elements only one-tenth the maximum permitted by law, as recommended by the National Committee on Radiation Protection and Measurement. (Other CONTRACT NEWS, p. 3 this LETTER.)

Public offering last fortnight of 150,000 common shares of Landsverk Electrometer Co., Glendale, Calif., at $2 a share, was oversubscribed according to Holton, Henderson & Co., Los Angeles, who handled the issue. Landsverk specializes in the design and manufacture of quartz fiber type instruments for measuring radioactivity. (Other FINANCIAL NEWS, p. 4 this LETTER.)

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ATOMIC ENERGY BUSINESS NEWS...

CONSOLIDATION OF OPERATIONS BY FIRM IN URANIUM FIELD: Vitro Chemical Co. has now closed down its Canonsburg, Pa., inorganic salts plant and moved all operations to its plant at Chattanooga, Tenn. Vitro Chemical, which is 91.6% owned by Vitro Corp. of America, and 8.4% owned by Pechiney, the French chemical group, made nickel, copper, uranium, zirconium, and other compounds used in the metal finishing, plating and polishing industries at Canonsburg. The plant had been set up in 1956 to recover uranium residues under USAEC contracts; these contracts were completed in December 1958, as were USAEC contracts for thorium compounds made by Vitro Chemical at its Chattanooga plant. Since the Chattanooga plant is more modern than Canonsburg, consolidation of activities there was believed in the best interests of the company. (No immediate changes are planned by Vitro for its other plant in Salt Lake City, Utah, where uranium concentrates are produced to fill USAEC contracts.)

FIRST WORK ON NUCLEAR POWER PLANT: First construction has started on the site of the nuclear reactor which will be erected for Saxton Nuclear Experimental Corp., Saxton, Pa. Although basically a research reactor, heat from it will be used to generate steam for Pennsylvania Electric's Saxton generating station; it is not expected, of course, to be an economic producer of electricity. Westinghouse Electric holds contract for general construction and will design and furnish the reactor. A. O. Smith will build the reactor containment vessel. The project is being financed by Pennsylvania Electric, Metropolitan Edison, New Jersey Power & Light, and Jersey Central Power & Light.

EXTENSIVE NUCLEAR WORK UNDERWAY BY U. S. FIRM: General Electric Co. has found the past eighteen months "technically the most productive in the history of the company's atomic energy ventures" Francis K. McCune, GE vice-president, told the Joint Congressional Committee on Atomic Energy last fortnight in Washington. In reviewing the company's domestic projects, he noted that the Dresden station built for Commonwealth Edison Co. and the Nuclear Power Group was completed ahead of schedule. This is the first large boiling water reactor and the first designed and constructed in the U. S. with attention to economic power generation. Concerning the Big Rock Plant, he said negotiations with Consumers Power Co., and the USAEC are still underway; design work was started last December in anticipation of confirmation of contracts. The Humboldt Bay station for Pacific Gas and Electric is 25% complete, with the GE portion 50% complete. Foreign projects include the reactor for RWE, German power company, where civil construction is 90% complete and equipment installation about 40% finished. Regular operation is scheduled for December, 1960. At the SENN project, in Italy, he noted, work is on schedule, with completion date set for October, 1963.

TURBINE GENERATOR FOR CANADIAN NUCLEAR POWER PLANT FROM BRITISH FIRM: The 200,000 kw turbine generator for the Canadian nuclear power plant to be built on the shores of Lake Huron will be supplied by Associated Electrical Industries (Canada) Ltd., with most of the work to be done in A.E.I.'s British shops. A.E.I. will work with Canadian General Electric Co., holder of prime contracts for the $60 million project.

IMPROVED TYPE OF FUEL ELEMENT TO BE SUPPLIED: Sylvania-Corning Nuclear Corp. has received firm order from the Government of Italy to supply an improved type of fuel element for the Italian research reactor at Ispra, near Milan. (This reactor, and associated facilities, is now being placed under the direction of the Euratom organization by the government.) Ispra will be the eighth reactor in Europe and the Near East to be loaded with Sylvania-Corning fuel elements. The 90% enriched uranium fuel will be shipped from the company's Hicksville, L.I., plant.

DIVERSIFICATION PLANNED BY CANADIAN URANIUM PRODUCER: World-wide program of exploration is planned by Consolidated Denison Mines, Canadian uranium producer. It will be part of the company's diversification program, in view of its presently profitable uranium operations and projected build-up of its cash reserves. Properties have been acquired by the firm in several areas of Canada for exploration, while locations in Alaska, Ireland, France, and other countries will be investigated. The company has the program under the direction of S. W. Holmes, chief of its exploration division.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...

NEW PRODUCTS: An improved 4-Pi proportional counter now being offered includes a unique gas lock which helps eliminate flushing time delays permitting more samples to be counted in a given period. Switching circuit of the counter permits separate or simultaneous counting in the upper or lower hemispheres without disconnecting anode cables, while a ball-type flowmeter and needle valve permit immediate determination of counting gas flow rates.--Nuclear-Ohio, Inc., Bay Village, Ohio.

Two new labeled compounds have been made available by this firm: allyl alcohol 1-C-14 and allyl bromide-1,3-C-14. Both compounds have use in research work, particularly in the petroleum industry.--Isotopes Specialties Co., Burbank, Calif.

PRODUCT NEWS: Some 6½ kg of uranium enriched up to 90% have been leased by the USAEC to the Government of Israel. In addition, the USAEC has sold Israel three plutonium-beryllium sources and three fission counters. The equipment is for use at the Israeli Atomic Research Center at Rehovoth, while the highly enriched uranium, valued at $111,000 will be the initial fuel loading of the 1000 thermal kw swimming pool type research reactor being constructed for the Center by American Machine and Foundry Co. (A grant of $350,000 has been made toward the cost of this reactor by the U. S. Government, and funds will be transferred upon completion of the project.)

MANUFACTURERS' NEWS: The Dosifilm section of the American Nuclear division of American Electronics, in Culver City, Calif., has been purchased by R. S. Landauer, Jr., & Co., Matteson, Ill. The acquisition gives Landauer(which claims to be the largest national film badge service) new west coast facilities. The California laboratory has been moved to a new location, under the Landauer management.

Difficulties from customs delays encountered by Tracerlab, Inc., in handling Canadian film badges have been overcome and the company has started immediate processing of orders from customers there. Eastern Canada is serviced from the firm's Waltham, Mass., facilities with subscribers in the western provinces handled by Tracerlab's California laboratory.

MANUFACTURERS' LITERATURE: New brochure describing products and services of Vitro Chemical Co., 630 Third Ave., New York, may be obtained from the company. Some 46 chemical and metallurgical products listed include cobalt, nickel, vanadium, uranium, zirconium salts, rare earths and thorium chemicals, metals and alloys.

ATOMIC ENERGY CONTRACT NEWS...

CONTRACTS AWARDED: M & C Nuclear, Inc., Attleboro, Mass., on low bid of $218,330 has been awarded contract by Argonne National Laboratory, Lemont, Ill., to fabricate some 39,800 pieces of depleted uranium with an aggregate weight of about 60-tons. The depleted uranium will be used in Argonne's zero power reactor (ZPR) VI, a critical assembly used to study the most advantageous patterns of fuel arrangements for reactor cores. Most of the 39,800 pieces will go into the blanket of ZPR VI, but about 2,000 pieces will on occasion be used in the core to reduce the amount of fissionable material during certain studies of core geometry. M & C's contract can be expanded to cover additional uranium since the amount it is now supplying is only about one-half of that needed for ZPR VI; it will however permit Argonne staff people to start their investigations.

Contracts have been awarded Controls for Radiation, Inc., Cambridge, Mass., by the Cambridge Research Center of the U. S. Air Force to do radioactivity analysis of several hundred samples of air particulates, rain and water. The contracts call for the continuation of the extremely sensitive low level analyses currently being performed by the firm for the Center. Analyses of these samples for strontium-90 and other radioactive nuclides produce data for determining the distribution of radioactivity into the atmosphere.

BIDS ASKED: Plans and specifications for construction of the Special Power Excursion Reactor Test No. 4 (SPERT-IV) at the national reactor testing station, Arco, Idaho, are now available to interested bidders. SPERT-IV will be the fourth excursion type reactor to be constructed at the testing station to carry out studies in reactor safety. It will be a large pool-type facility for basic reactor studies with various types of cores. Estimated to cost some $1,300,000, the job is covered by invitation no. AT(10-1)-1022 which calls for construction of the reactor building, process and utility piping, the coolant system, instrumentation, water treatment system, tanks and vessels, and related facility services. Bids are due by March 16, 1960. (Phillips Petroleum, who did the conceptual design for SPERT-IV, operate the SPERT series of reactors.)

ATOMIC ENERGY PATENT DIGEST...

PATENTS ISSUED February 16, 1960 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Extraction of uranium from lignite ores. Burt C. Mariacher, inventor. No. 2,925,321 assigned to International Resources Corp., Custer, S. Dak. (2) Method of stabilizing a nuclear reactor coolant. Eugene L. Colichman, inventor. No. 2,925,448 assigned to North American Aviation, Inc. (3) Microwave linear accelerator circuit. Maurice C. Kelliher, inventor. No. 2,925,522 assigned to High Voltage Engineering Corp., Cambridge, Mass.

PATENTS ISSUED February 16, 1960 to GOVERNMENTAL ORGANIZATIONS: (1) Atomic burst locators. J. D. Loconti, J. M. Davies, A. S. Hunter, H. W. Coles, M. R. Altamura, inventors. No. 2,925,498 assigned to Secretary of the Army. (2) Method of separating plutonium. Henry G. Heal, inventor. No. 2,925,322 assigned to USAEC. (3) Method for the recovery of cesium values. Stanley J. Rimshaw,inventor. No. 2,925,323 assigned to USAEC. (4) Continuous gas analyzer. Sidney Katz, Charles W. Weber, inventors. No. 2,925,327 assigned to USAEC. (5) Low energy counting chambers. Paul M. Hayes, inventor. No. 2,925,509 assigned to USAEC. (6) High energy gaseous discharge device. Vernal Josephson, inventor. No. 2,925,512 assigned to USAEC. (7) Method of jacketing a fissionable body. Edward C. Creutz, inventor. No. 2,924,877 assigned to USAEC.

PATENTS ISSUED February 23, 1960 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Production of thorium. Thomas P. Whaley, inventor. No. 2,926,082 assigned to Ethyl Corp., New York, N.Y. (2) Isotope separator. Joseph Slepian, inventor. No. 2,926,252 issued to inventor of record. (3) Nucleonic x-ray apparatus. John W. Clark, Loren R. Wilson, inventors. No. 2,926,262 assigned to Litton Industries, Inc., Beverly Hills, Calif. (4) Apparatus for producing neutrons. J. M. Brinkerhoff, Willard C. Hadley, Victor E. Ragosine, James W. Shearer, inventors. No. 2,926,271 assigned to Tracerlab, Inc., Waltham, Mass. (5) Linear particle accelerator. John W. Gallop, inventor. No. 2,926,279 assigned to National Research Development Corp., London, England. (6) Prep ation of graft copolymers Roger K. Graham, Muriel S. Gluckman, inventors. No. 2,926,126 assigned to Rohm & Haas Co., Philadelphia, Pa.

PATENTS ISSUED February 23, 1960 to GOVERNMENTAL ORGANIZATIONS: (1) Concentration of plutonium using an iodate precipitate. Bernard A. Fries, inventor. No. 2,926,067 assigned to USAEC. (2) Method for the preparation of plutonium halides and oxyhalides. Norman R. Davidson, Joseph J. Katz, inventors. No. 2,926,068 assigned to USAEC. (3) Ternary alloy containing plutonium. James T. Weber, inventor. No. 2,926,083 assigned to USAEC. (4) Method of forming protective coating on ferrous metal surfaces. Donald G. Schweitzer, John R. Weeks, Otto F. Kammerer, David H. Gurinsky, inventors. No. 2,926,111. (5) Heat treated uranium molybednum alloy. Robert K. McGeary, William M. Justusson, inventors. No. 2,926,113 assigned to USAEC. (6) Neutronic reactor with accessible thimble and emergency cooling features. Willard H. McCorkle, inventor. No. 2,926,127 assigned to USAEC. (7) Ion acceleration system. John S. Luce, John A. Martin, inventors. No. 2,926,251 assigned to USAEC. (8) Ultrasonic neutron dosimeter. Rohn Truell, John de Llerk, Paul W. Levy, inventors. No. 2,926,261 assigned to USAEC.

ATOMIC ENERGY FINANCIAL NEWS...

URANIUM SHARES LOSE GROUND ON U. S. AND CANADIAN EXCHANGES: Uranium shares in general, and those of the Rio Tinto group in particular, showed losses in the past fortnight. As described elsewhere in this LETTER (p. 1), companies of the Rio Tinto group will be consolidated into Rio Algom; when terms of the amalgamation were known, the shares all sold off. Easson's uranium index was at a low for the year.

ACCELERATOR MANUFACTURER HAS RECORD YEAR: Sales and net income of High Voltage Engineering Corp. reached record highs in the fiscal year ended December 31, 1959, according to Denis M. Robinson, president. Sales rose 23% over 1958 to a high of $7,087,916 while net income increased 44% over 1958 to reach $626,062. With income from subsidiaries, net was $1.87 per share, compared to last year's $1.33 per share. The company has recently started work on plant expansion to increase available space some 50% to 180,000 square feet.

PEOPLE...in atomic energy work...

Robert E. Wilson has been named by President Eisenhower to be a member of the Atomic Energy Commission. He is former board chairman of Standard Oil Co. (Indiana).

Samuel J. Levine has been named acting general manager of General Electric Co.'s Aircraft Nuclear Propulsion Department. He replaces D. R. Shoults who has been appointed representative--atomic development for GE.

NEW BOOKS & OTHER PUBLICATIONS...

Nuclear Fusion. William R. Allis. Status of nuclear fusion as reported at the 1958 Geneva conference. 450-pages. ($12.50)...Basic Principles of Nuclear Science and Reactors. Alan M. Jacobs, Donald E. Kline, Forrest J. Remick. An introductory text to the design and use of nuclear reactors and radioisotopes. 250-pages. ($7.50)--D. Van Nostrand Co., Inc., Princeton, N.J.

Nuclear Radiation Engineering; An Introduction. F. W. Hutchinson. For the administrator or engineer who must know the fundamentals of atomic structure, source of nuclear energy, and principles of radioactivity. 155-pages. Ronald Press Co., New York 10, N.Y. ($6.00)

Towards a New Energy Pattern in Europe. A report prepared by the energy advisory commission of the O.E.E.C. under Prof. Austin Robinson. 125-pages.--O.E.E.C. Mission, 1346 Conn. Ave., N.W., Wash. 6, D.C.

Chemical Processing of Irradiated Fuels. Proceedings of the USAEC-sponsored symposium at Richland, Wash., Oct. 20-21, 1959. No. TID-7583. ($4.50)...The Hydrogen Sulfide Dual-Temperature Process for Heavy Water Separation. A 21-page bibliography of selected report literature. No. TID-3091. (75¢)...An Experimental Evaluation of the Radiation Protection Afforded by a Large Modern Concrete Office Building. Tests made by the USAEC at its new headquarters in Germantown, Md. No. CEX-59.1. (60¢)--Office of Technical Services, Wash. 25, D.C.

Special Sources of Information on Isotopes. Some 300 references on the subject as compiled by the USAEC. No. TID-4563.--Office of Isotopes Development, USAEC, Wash. 25, D.C. (free)

Civilian Power Reactor Program; Part I. A summary of the technical and economic status of this program in the U. S. as of 1959. No. TID-8516.--Superintendent of Documents, Wash. 25, D.C. ($1.00)

NOTES: Proceedings of the symposium on Health Physics in Nuclear Installations which was held May, 1959, in Riso, Denmark, has been issued by the O.E.E.C.'s European Nuclear Energy Agency, 2 rue Andre-Pascal, Paris 16, France.

The second edition of the USAEC's Reactor Handbook will shortly be issued by Interscience Publishers, Inc., 250 Fifth Ave., New York, in four volumes: Materials, edited by C. R. Tipton, Jr.; Physics and Shielding, edited by H. Soodak; Engineering, edited by S. McLain and J. J. Dutton; and Fuel Processing, edited by S. M. Stoller. Interscience says the price for the four volumes will be not less than $87.50 and not more than $125.00

ATOMIC ENERGY WORK OUTSIDE THE U.S...

ITALY: Nuclear power plant under construction by International General Electric Co. at Punta Garigliano, half way between Rome and Naples, for Italy's Senn Company, will have its power output increased from 150 megawatts to 230 megawatts. The plant, which is the only one in the Euratom-U.S. program, will ultimately be the world's largest boiling water reactor. Assistance in financing the project is coming from the World Bank which has made a $40 million commitment toward its cost.

Disagreements which arose recently on financial matters concerning the nuclear power plant under construction in Italy for Agip Nuclear have been settled after several days of negotiations between Signor Mattei and Mr. E. McAlpine. Signor Mattei is president of E.N.I.-A.G.I.P., the government oil corporation of which Agip Nucleare is a subsidiary. Mr. McAlpine is chairman of the British Nuclear Power Plant Co., the consortium building the plant.

BRAZIL: The London firm of Kennedy and Donkin, consulting engineers, has been asked by the Atomic Energy Commission of Brazil to prepare invitations to bid on the design and construction of a 150 megawatt Calder Hall-type nuclear power station to be located 15 miles north of Parati, between Rio de Janeiro and Sao Paulo. Some five British groups will be asked to submit tenders for the job. It is understood that financing will be provided by a consortium of European banks.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

March 1, 1960